



0941.65858

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re U.S. Patent Application )

Applicant: Nishida et al. )

Serial No. 09/960,094 )

Filed: September 21, 2001 )

For: INDUCTANCE DEVICE DRIVING  
SYSTEM, INFORMATION  
STORAGE APPARATUS, AND  
INDUCTANCE DEVICE DRIVING  
METHOD )

Art Unit: 2651 )

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Registration No. 29367  
Attorney for Applicant

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SUBMISSION OF SUBSTITUTE FORMAL DRAWINGS

Assistant Commissioner for Patents  
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Sir:

Please approve the attached substitute formal drawings, which are the originals of  
the facsimile drawings filed with this application. No new matter has been added.

Respectfully submitted,

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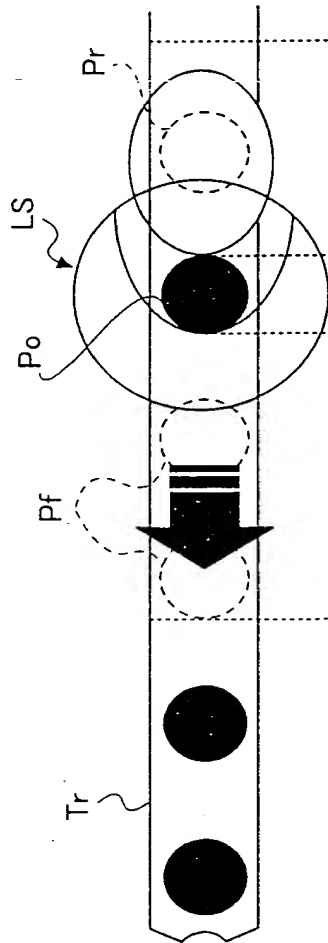


FIG. 1A

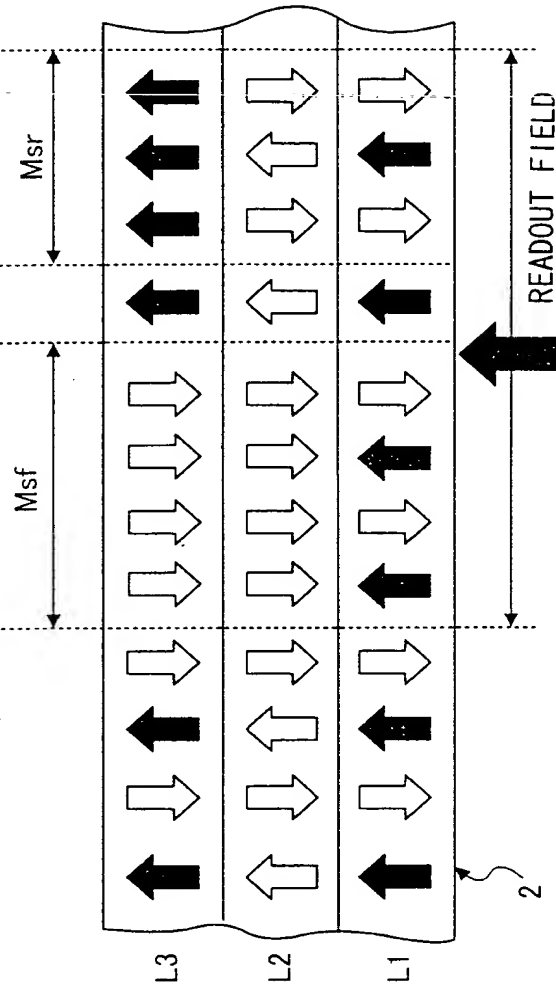
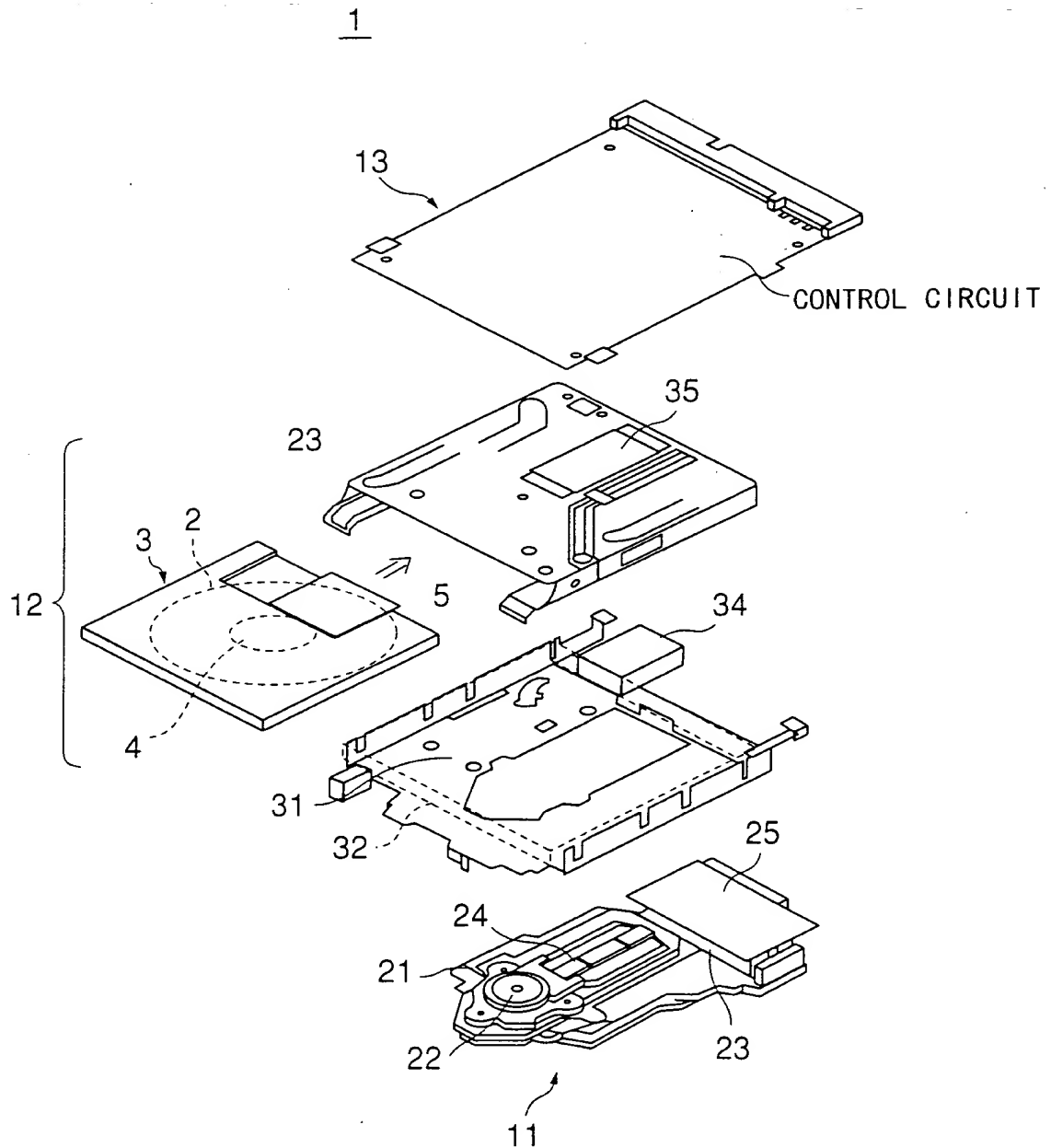


FIG. 1B

APPROVED	P. G. FIG.	
BY	CLASS	SUBCLASS
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FIG. 2



APPROVED	O.G. FIG.	
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FIG. 3A

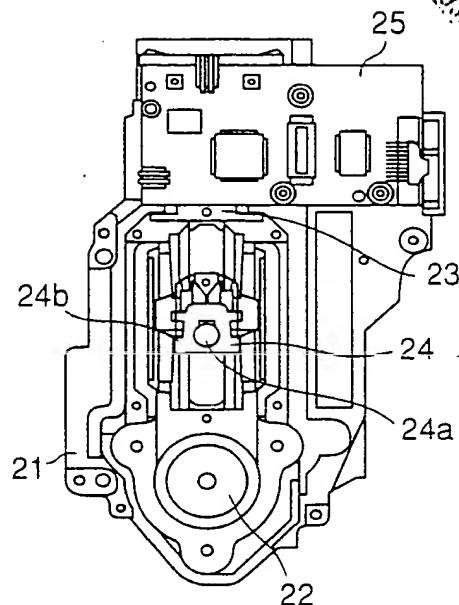


FIG. 3B

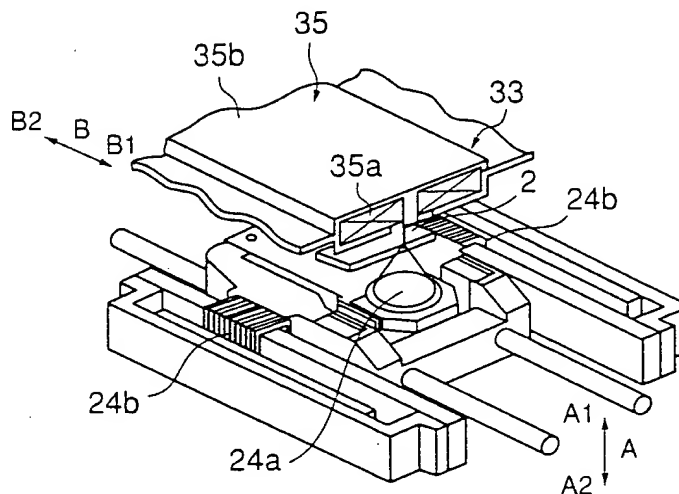


FIG. 3C

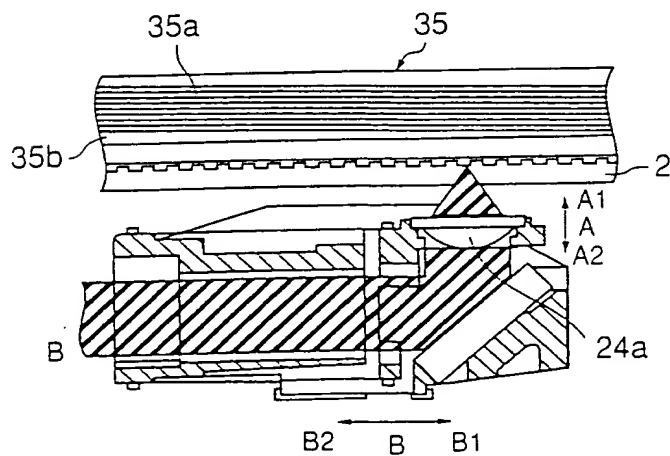




FIG.4

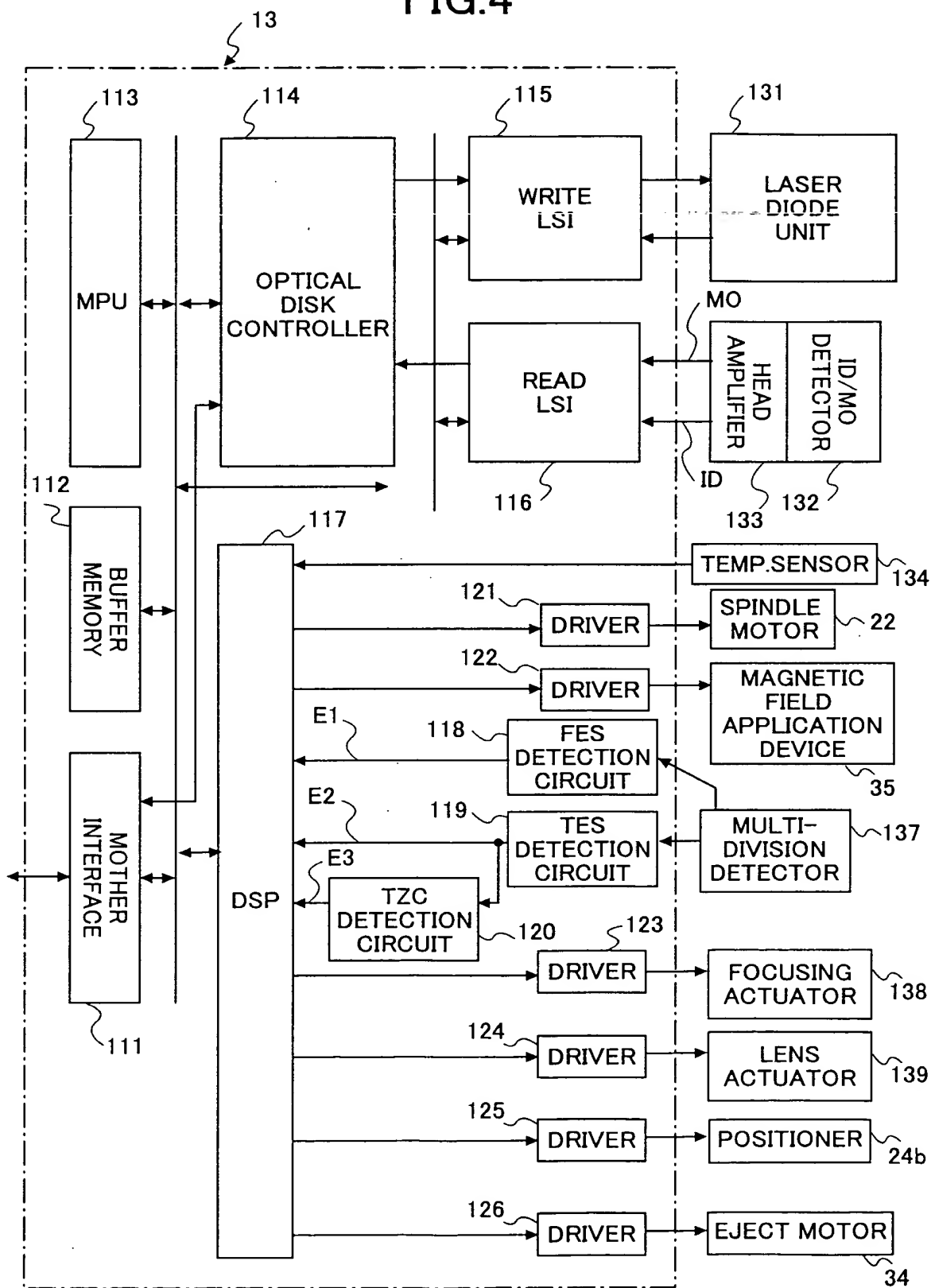
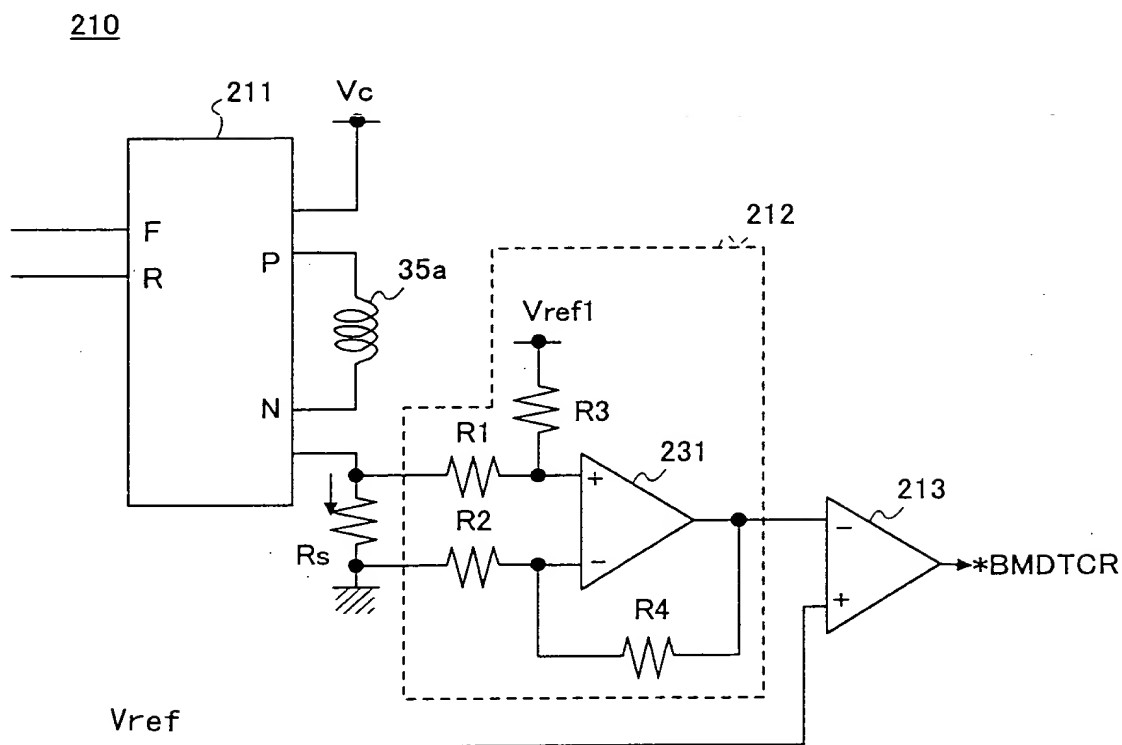




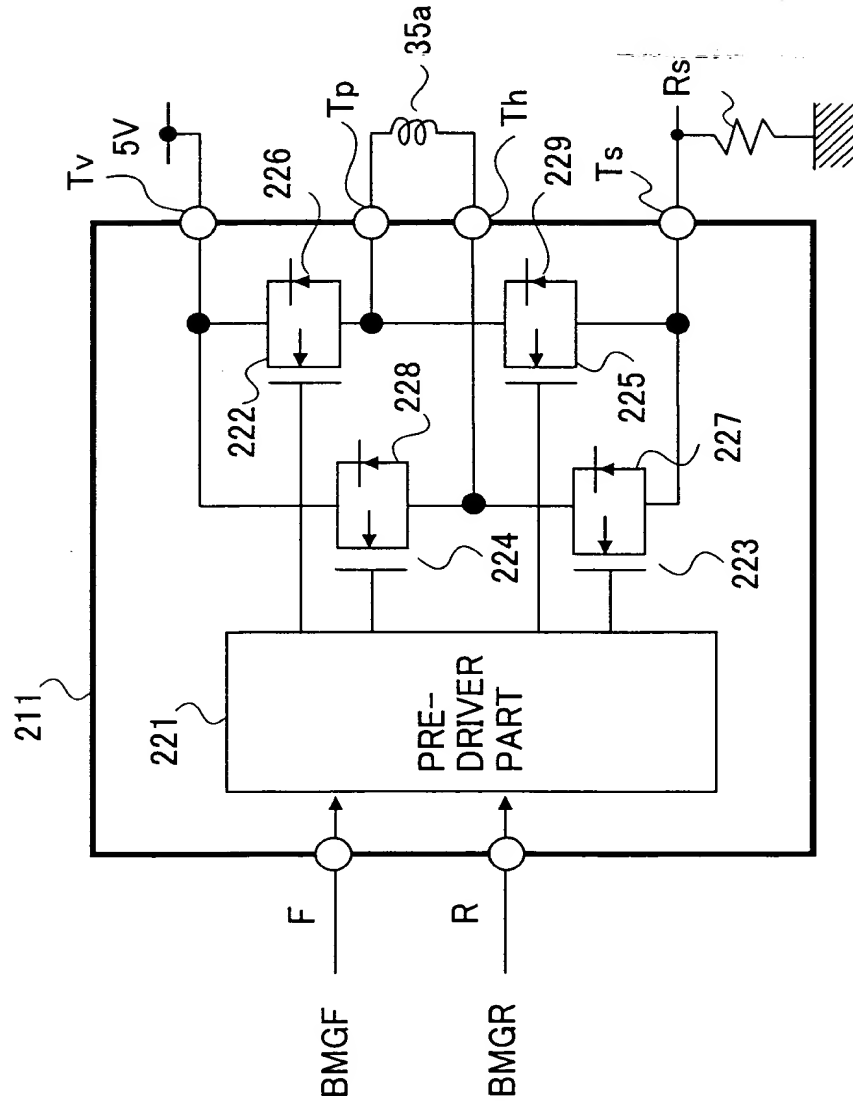
FIG. 5



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FIG.6



APPROVED	C.G. FIG.
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FIG.7

BMGF	BMGR	P OUTPUT	N OUTPUT	NOTE
H	L	H	L	POSITIVE CHANGE(P→N)
L	H	L	H	NEGATIVE CHANGE(N→P)
L	L	L	L	SHORT BREAK



APPROVED	C.G. FIG.	
BY	CLASS	SUBCLASS
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FIG.8

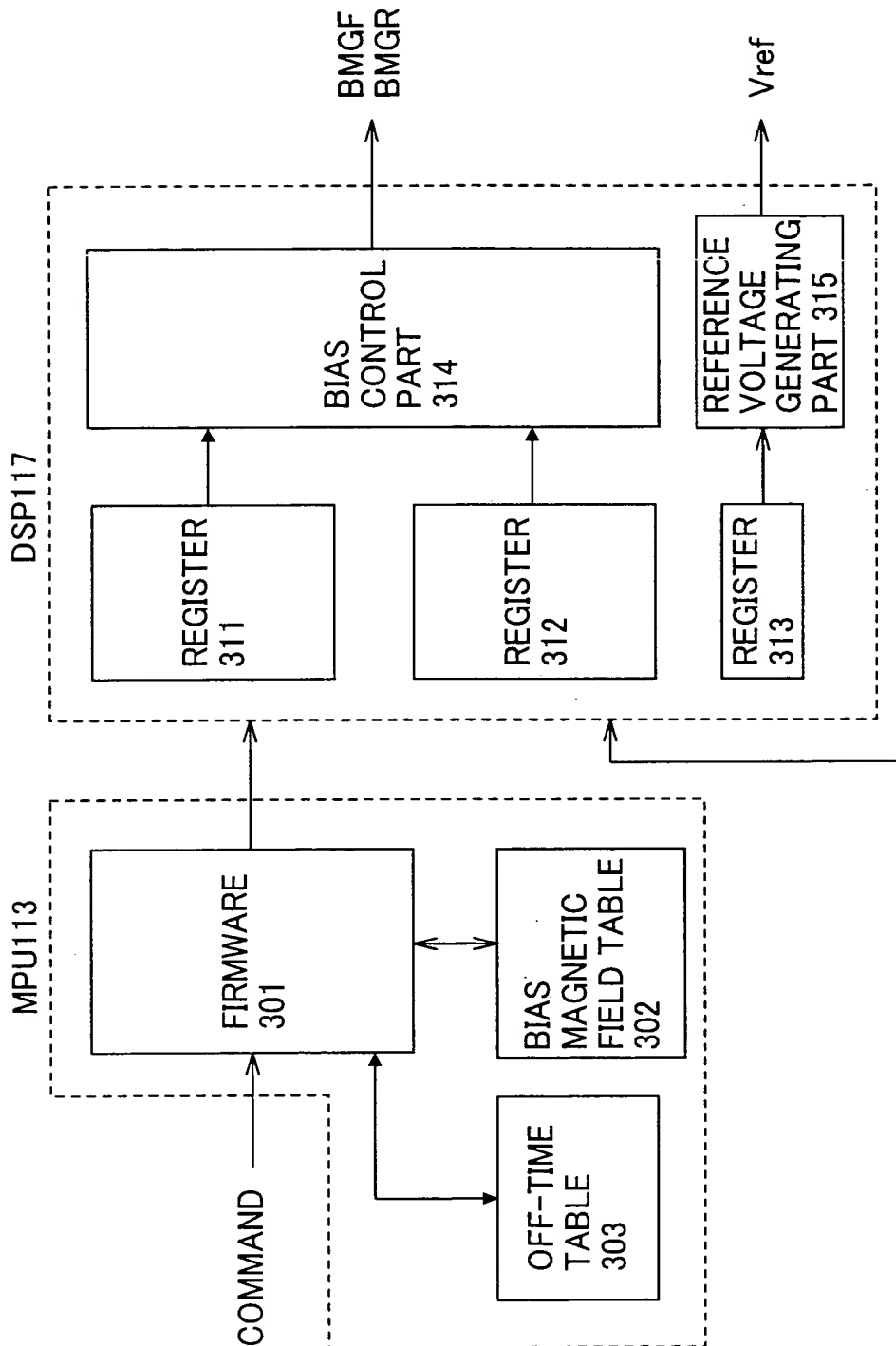




FIG.9

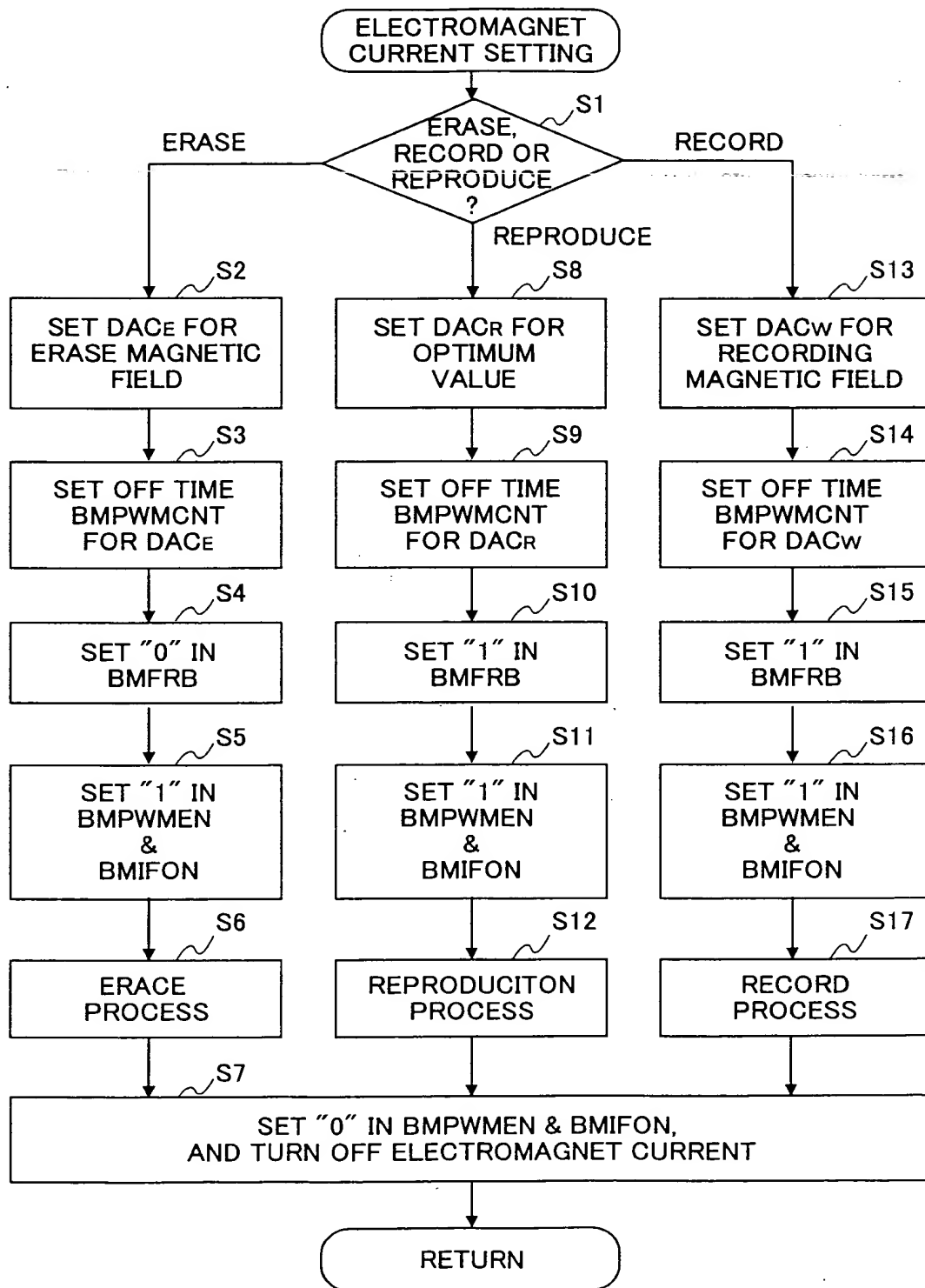
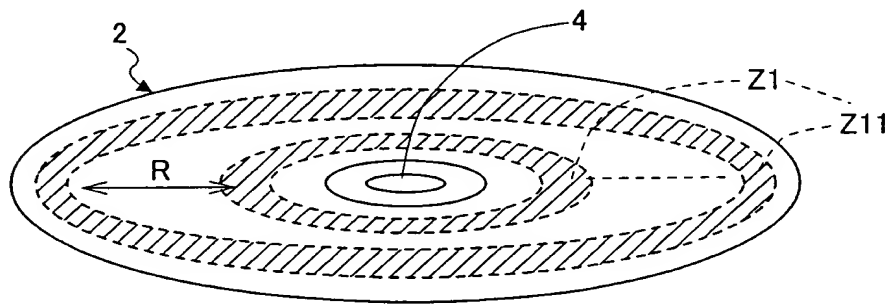




FIG.10A

ZONE NUMBER	ELECTROMAGNET ELECTRIC CURRENT			
	ERASE	RECORD	INITIAL VALUE FOR REPRODUCTION	CALIBRATION COEFFICIENT
Z1	I <sub>E</sub> [mA] (DACE)	I <sub>W</sub> [mA] (DACW)	I <sub>RZ1</sub> [mA](DACR <sub>Z1</sub> )	$\alpha$ 1
Z2			I <sub>RZ2</sub> [mA](DACR <sub>Z2</sub> )	$\alpha$ 2
Z3			I <sub>RZ3</sub> [mA](DACR <sub>Z3</sub> )	$\alpha$ 3
Z4			I <sub>RZ4</sub> [mA](DACR <sub>Z4</sub> )	$\alpha$ 4
Z5			I <sub>RZ5</sub> [mA](DACR <sub>Z5</sub> )	$\alpha$ 5
Z6			I <sub>RZ6</sub> [mA](DACR <sub>Z6</sub> )	$\alpha$ 6
Z7			I <sub>RZ7</sub> [mA](DACR <sub>Z7</sub> )	$\alpha$ 7
Z8			I <sub>RZ8</sub> [mA](DACR <sub>Z8</sub> )	$\alpha$ 8
Z9			I <sub>RZ9</sub> [mA](DACR <sub>Z9</sub> )	$\alpha$ 9
Z10			I <sub>RZ10</sub> [mA](DACR <sub>Z10</sub> )	$\alpha$ 10
Z11			I <sub>RZ11</sub> [mA](DACR <sub>Z11</sub> )	$\alpha$ 11

FIG.10B



APPROVED	D.G. FIG.	
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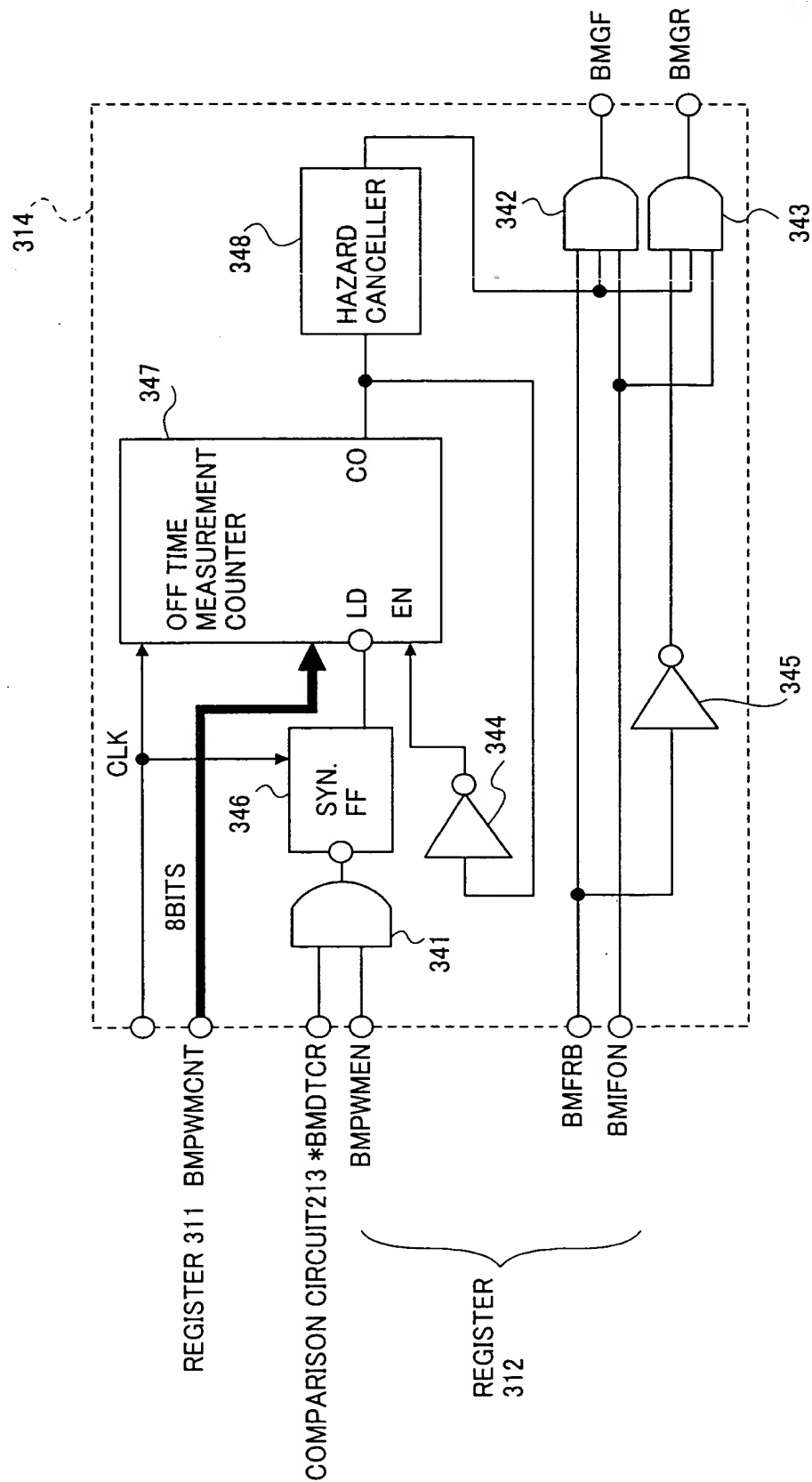
## FIG. 11

303

BLAS_DAC	BMPWMCNT
0x00~0x0f	0x18
0x10~0x1f	0x10
0x20~0x3f	0x08
0x40~0x7f	0x04
0x80~0xff	0x01



FIG.12



APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
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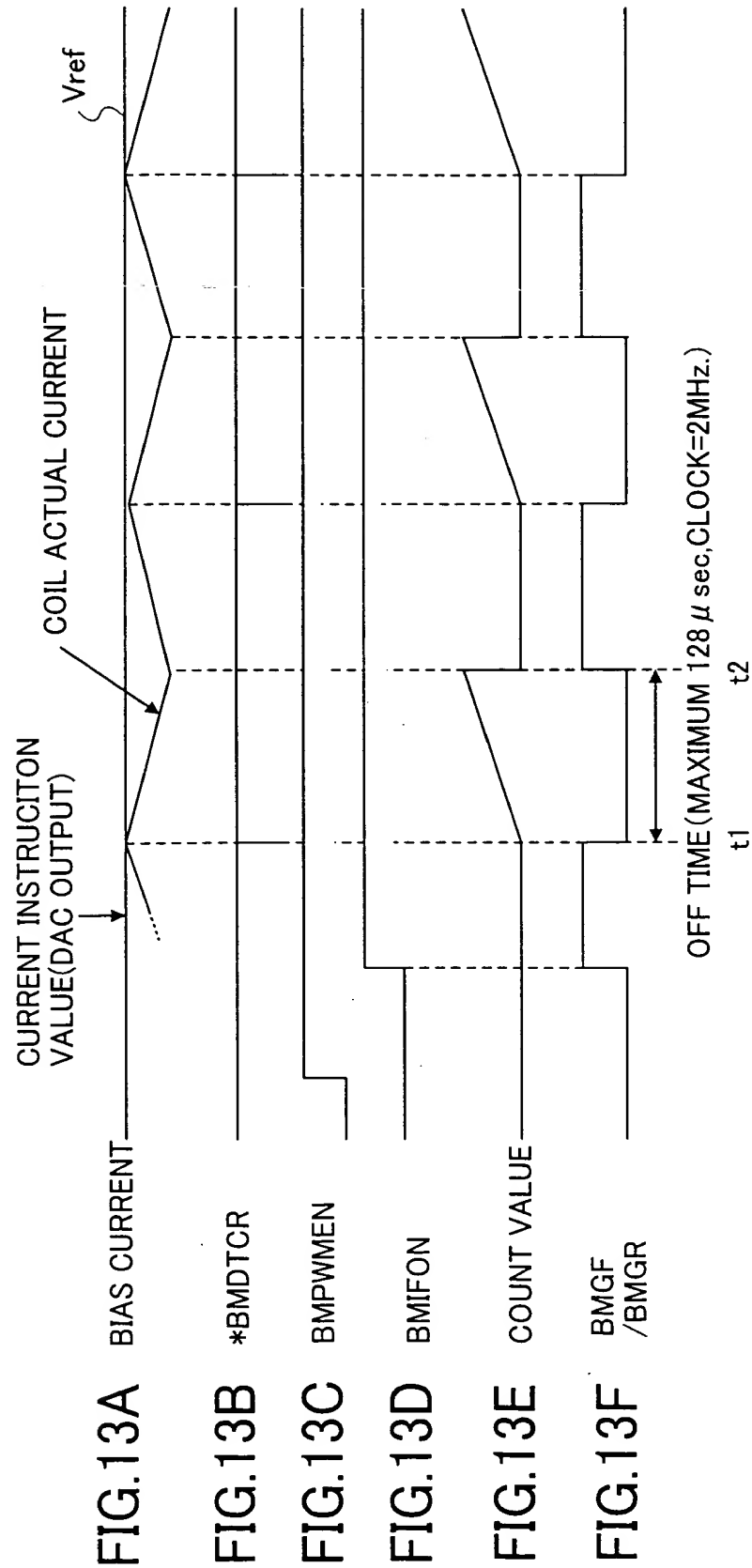
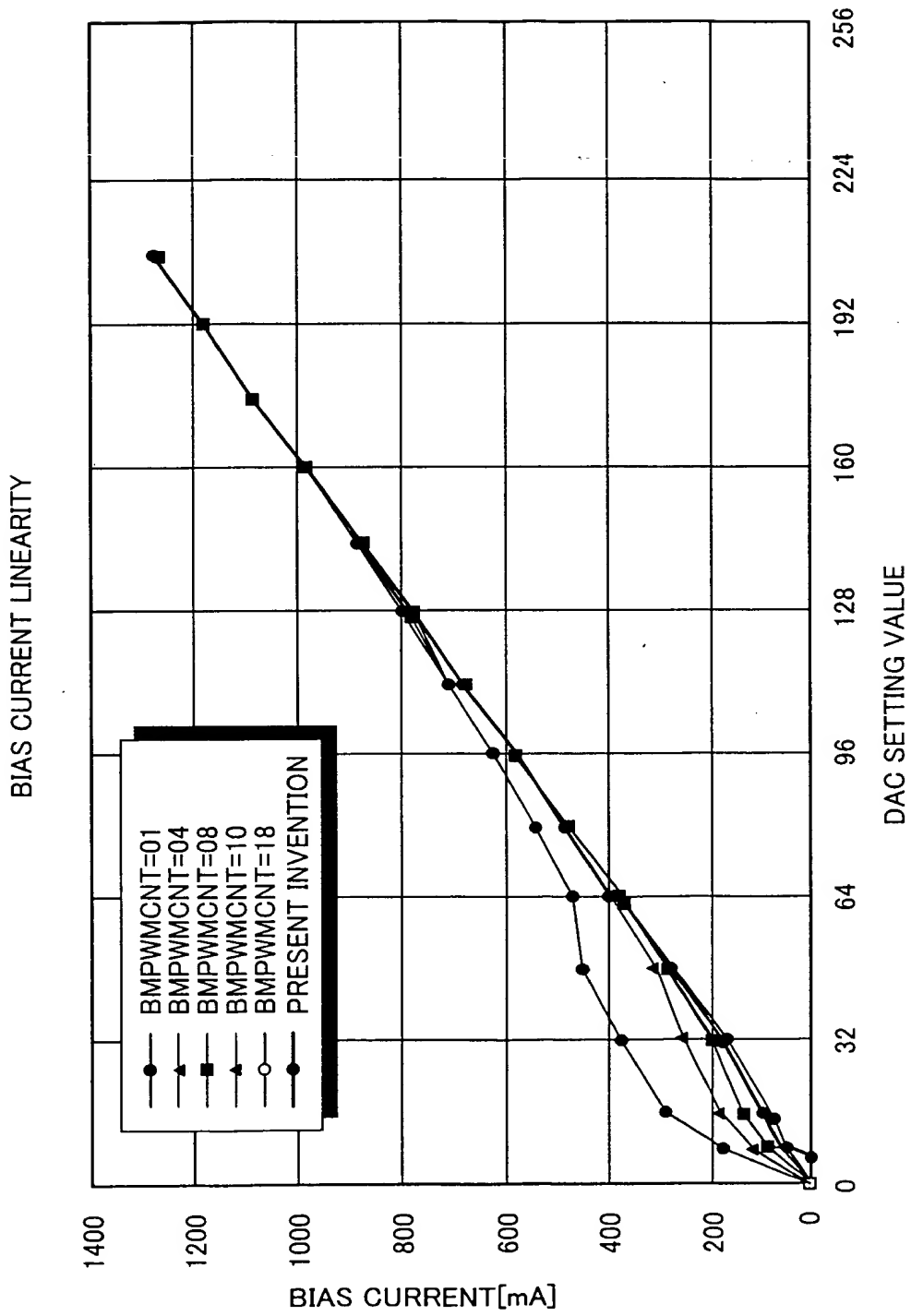
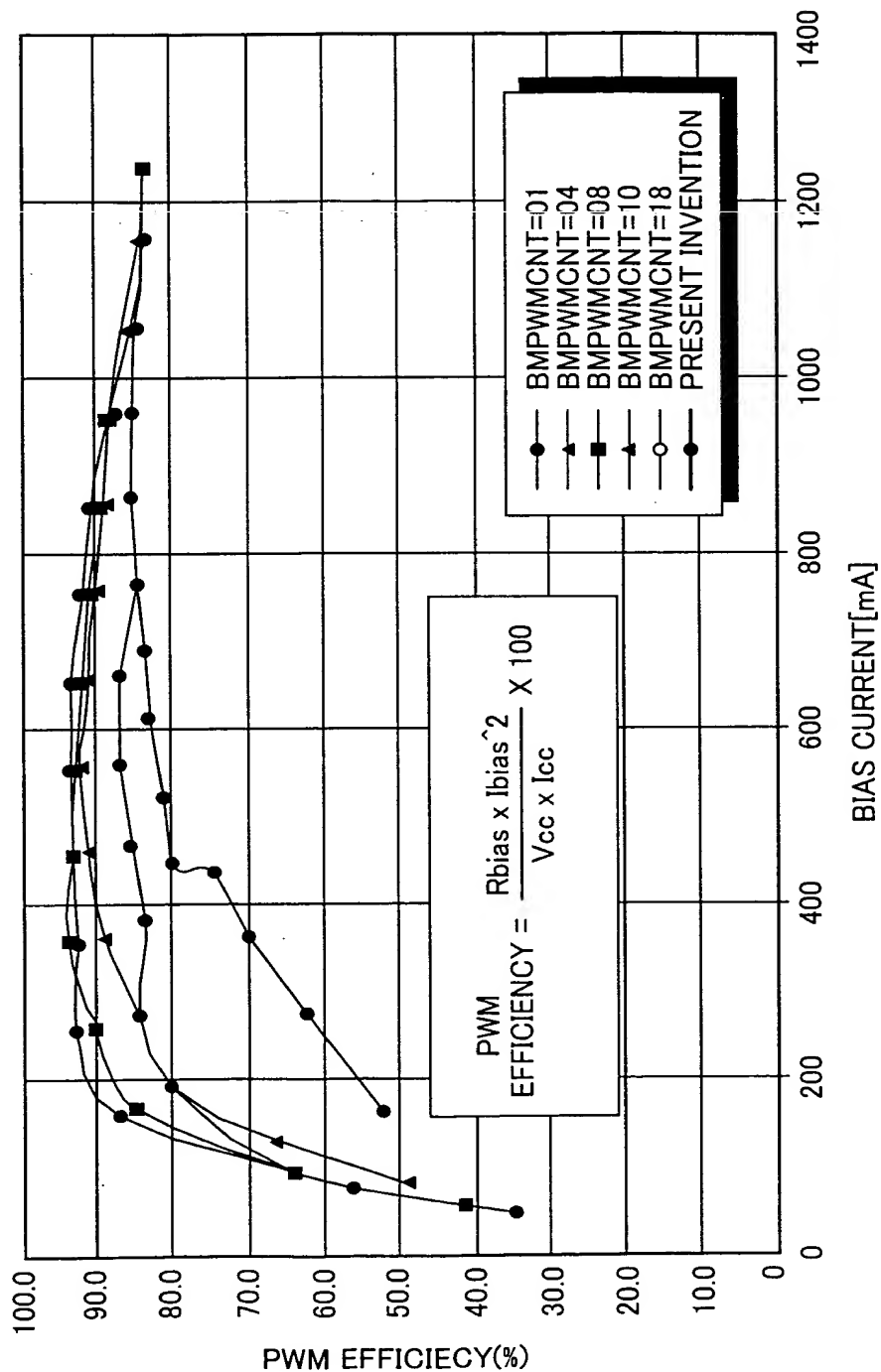




FIG.14



PWM EFFICIENCY( $R_{bias}=3.3\Omega$ )



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The graph plots Power Supply Ripple Voltage [mV] on the y-axis (0 to 400) against Bias Current [mA] on the x-axis (0 to 1400). Six data series are shown, each representing a different BMPWMCNT value or the present invention. The series are: BMPWMCNT=01 (filled circles), BMPWMCNT=04 (filled triangles), BMPWMCNT=08 (filled squares), BMPWMCNT=10 (open circles), BMPWMCNT=18 (open circles), and PRESENT INVENTION (filled circles). The ripple voltage generally increases with bias current, with the present invention showing the lowest ripple voltage across the range.

Bias Current [mA]	BMPWMCNT=01 [mV]	BMPWMCNT=04 [mV]	BMPWMCNT=08 [mV]	BMPWMCNT=10 [mV]	BMPWMCNT=18 [mV]	PRESENT INVENTION [mV]
0	~35	~35	~35	~35	~35	~35
200	~45	~45	~45	~45	~45	~45
400	~55	~55	~55	~55	~55	~55
600	~65	~65	~65	~65	~65	~65
800	~75	~75	~75	~75	~75	~75
1000	~85	~85	~85	~85	~85	~85
1200	~95	~95	~95	~95	~95	~95
1400	~105	~105	~105	~105	~105	~105